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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/697,492	10/27/2000	Pascal Lefebvre	Q61274	3518

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EXAMINER

BARANYAI, LAWRENCE

ART UNIT PAPER NUMBER

2665

DATE MAILED: 02/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/697,492

Applicant(s)

LEFEBVRE, PASCAL

Examiner

Lawrence Baranyai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

1. An initialed and dated copy of Applicant's IDS form 1449, Paper No. 2, is attached to the instant Office action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 4, 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable by Aida et al., (EP-0814632 A2) and in further view of ATM standards (U). Aida et al., in the analogous field of communications, teaches a method and apparatus for managing traffic between endpoints of an ATM network. Aida et al., does not explicitly teach the details of the ATM standard of service categories and traffic contracts in an ATM network. The ATM standards (U) teaches the details of ATM service classes and traffic contracts.

4. Regarding claims 1 and 5, Aida et al., teaches a multiplexer (fig. 7, ATM exchanger) in which the user cells are assigned a virtual channel (fig. 7 see downward direction from user to receiving end user) based on a given quality of service (page 5 lines 29 – page 6 line 11) per the ATM standard. Multiple virtual channels may share a virtual path as is known the art for ATM transmission. Each virtual channel is assigned a buffer memory for the ATM cells to which assigned a priority corresponding to the given quality of service (page 5 lines 34-39, and fig. 1) as required by claims 2, 4 and 6. Regarding claim 7, the quality of service categories include CBR, VBR RT, VBR NRT and UBR (page 5 lines 29-30) and apply to each direction of transmission since a virtual path is setup in each direction of transmission (claim 9), since this is known in the art for ATM transmission from the ATM standard. Regarding claim 8, the system manages the upstream and downstream requests independently and according to the available bandwidth on the virtual path. The virtual path is setup independently for each direction of transmission. Therefore the system supports variable downstream bandwidth and fixed upstream bandwidth, using CBR for example. The procedure is detailed on page 6 line 46 – page 11 line 9. The control means is shown in fig. 2 and includes buffer memory (fig. 1) as required by claim 2 and —

This is equivalent to a telecommunication network, preferably an ATM network, in which the downward data rate, from the network to the users, is greater than the upward data rate, from the users to the network, comprising multiplexers for establishing connections, constituting virtual channels, between users and the network, the virtual channels being grouped into virtual paths, characterized in that, in each multiplexer

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close to the user, the bandwidth allocated to each downward virtual path is variable under the control of a means, such as a call control means, provided upstream in a switching node and in that the upward virtual paths have a fixed bandwidth (claim 1); further characterized in that the control means is provided with a memory containing information representing the maximum bandwidth allocated downwardly to each user and representing the bandwidth allocated downwardly to the interface, or the interfaces, between the users' multiplexer and the switching node, this control means using these information in order to limit the bandwidth allocated to each user to its authorized maximum, and in order to limit the total bandwidth allocated to the virtual paths to a value which is at most equal to the interface, or to interfaces (claim 2); further characterized in that the multiplexer which is the closest to the user has, for each virtual channel of the downward direction, a buffer memory for ATM cells with a given priority; a multiplexer constituting a node of a telecommunication network for transmitting ATM cells, this node being close to a user, characterized in that, in this multiplexer, each downward virtual path has a plurality of virtual channels to each of which is allocated a given quality of service (claim 5); further characterized in that, to each virtual channel is assigned a buffer memory for the ATM cells to which is assigned a priority corresponding to the given quality of service (claim 6); further characterized in that the quality of service is selected among the following qualities of service: constant bit rate (CBR), variable bit rate (VBR) real time, variable bit rate non real time, and unspecified bit rate (UBR) per claim 7; providing a method for controlling a telecommunication network, in which connections are realized by virtual channels grouped into virtual

paths, characterized in that the bandwidth of the downward virtual paths are controllable dynamically from an upstream controller (30) and in that the 20 bandwidth of each upward virtual path is fixed (claim 8); characterized in that to each downward virtual channel, is assigned a given quality of service (claim 9).

These methods have the advantage of utilizing the features defined in the ATM standard in a system to dynamically assign bandwidth to a downward virtual path while holding the upward path to a fixed bandwidth to support asymmetrical bandwidth situations such as an internet connection which may have a large, variable downstream requirement while the upstream bandwidth requirement is fixed in addition to managing QOS requirements. It would have been obvious for one of ordinary skill in the art at the time of the invention when presented with the connection admission control method of Aida et al., to apply this connection admission control method to implement variable downstream bandwidth and fixed upstream bandwidth by using the features known in the ATM standard with the motivation being to manage the available network bandwidth more efficiently for situations requiring asymmetrical bandwidth.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aida et al. in view of ATM standards, as noted for claims 1-2, 4, 5-9, and in further view of Chiu et al. (US 6,597,689). Aida et al. and the ATM standard, as applied to claims 1-2, 4, 5-9 above, teaches a multi-class connection control method and device in an ATM network. Aida et al. and the ATM standard, do not teach the use of Switched Virtual Circuits (SVC) and Permanent Virtual Circuits (PVC). Chiu et al., in the analogous field of communications, teaches the use of PVCs and SVCs for setting up virtual connections

in an ATM network to meet Quality of Service requirements and for networks with asymmetrical user bandwidth requirements (col. 7 line 22 - col. 8 line 60).

These methods have the advantage of increasing the system performance by improving system bandwidth utilization. It would have been obvious to one of ordinary skill in the art at the time of the invention when presented with the work of Chiu et al., to apply the SVC and PVC methods of Chiu et al., to the multi-class ATM connection admission control methods of Aida et al. and the ATM standard, with the motivation being to improve the system performance through the use of SVCs to dynamically assign bandwidth as needed to meet QoS requirements.

Citation of Relevant Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takahashi et al. (US 6,282,197) and Davison et al. (US 6,400,687) describe methods of bandwidth management in ATM networks. Etorre et al. (US 6,594,265) describes an adjustable bandwidth management method for ATM.

Examiner Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Baranyai whose telephone number is (703) 305-8707. The examiner can normally be reached on Monday-Thursday: 6:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (703) 308-6602. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9700.

lb

A handwritten signature in black ink, appearing to read 'Huy D. Vu', with a long horizontal line extending to the right.

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600